

Application Number 10/047,272
Amendment dated 8/22/03
Reply to Office Action of June 5, 2003

REMARKS

Claims 1-16 are pending in the present application. Claims 1, 6, 7, 10, 11 and 16 are amended. No new matter is added by the claim amendments. Entry is respectfully requested.

Claims 1-6 and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kornrumpf (U.S. Patent Number 5,345,205). Claims 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kornrumpf. In view of the amendments to the claims and the following remarks, the rejections are respectfully traversed, and reconsideration of the rejections is requested.

The applicant's invention is directed to a packaging structure and method for packaging semiconductor devices. A plurality of semiconductor chips are mounted to a film. The film is folded in a predetermined direction so as to package the plurality of semiconductor chips in one package. In one particular embodiment, set forth in claims 11 through 16, the semiconductor chips are mounted to a first side of the film, and the film is folded 180 degrees in the direction of a second side of the film.

All of the claims set forth that the invention is directed to the packaging of a plurality of semiconductor chips by mounting the semiconductor chips to a film and folding the film. The Kornrumpf patent fails to teach or suggest the invention set forth in the amended claims.

Specifically, Kornrumpf discloses a multimodule microwave system. The Kornrumpf system 100 uses a high-density interconnect structure 130 to interconnect a plurality of assembled modules 101, 102, 103. The high-density interconnect structure 130 is folded or bent to locate the modules in a tier structure (see Kornrumpf at column 9 line 46 through column 10 line 7). Each of the Kornrumpf modules 101, 102 and 103 includes a substrate 110 and a plurality of semiconductor chips, microwave devices, monolithic microwave integrated circuits and other components. These components, identified by reference numeral 120, are collectively referred to as "chips." Each of the chips 120 in a module 101, 102, 103 is bonded to its respective substrate 110 (see Kornrumpf at column 9 lines 57).

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Hence, Kornrumpf teaches a system including a plurality of modules connected via a flexible interconnect structure. Each module includes a plurality of chips bonded to a substrate. Kornrumpf does not teach or suggest a plurality of semiconductor chips mounted to a film that is folded or bent to form the package for the chips, as set forth in the amended claims. The only structure attached to a flexible film in Kornrumpf is an assembled module, not a chip, as set forth in the applicant's claims. Any chips mentioned in Kornrumpf are bonded to a substrate, not a folded film, as set forth in the amended claims. Therefore, Kornrumpf neither teaches nor suggests the invention set forth in the amended claims.

Furthermore, the modules 101, 102, 103 cannot properly be analogized to the chips of the claimed invention, since Kornrumpf explicitly states that its modules 101, 102, 103 contain chips. That is, the chips in Kornrumpf are inside the modules 101, 102, 103, and they are mounted to a substrate, not to a folded film. Accordingly, any interpretation of the Kornrumpf modules as the applicant's claimed semiconductor chips is precluded by the specific language of the Kornrumpf patent.

In view of the above, Kornrumpf fails to teach or suggest the invention set forth in the amended claims. Furthermore, there is no interpretation of Kornrumpf or the amended claims which would render the claims unpatentable over Kornrumpf. Therefore, it is believed that the amended claims are allowable over Kornrumpf. Accordingly, reconsideration of the rejections of claims 1-16 under 35 U.S.C. 102(b) as being anticipated by Kornrumpf is respectfully requested.

Respectfully submitted,

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